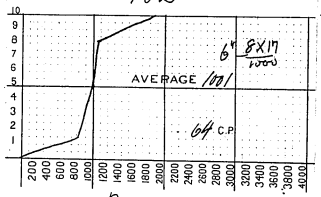
Charles Batchelor Notebook, Cat. 1303

This notebook covers the period August-October 1882. All of the entries are by John W. Howell. The book contains notes and graphs of electric lamp experiments, which are numbered 982 through 1301. The spine is labeled "Expt 982-1301." The cover is marked "3." There are approximately 130 unnumbered pages.

No C aug 10, 1882.

982 Carbon forms double cover

982

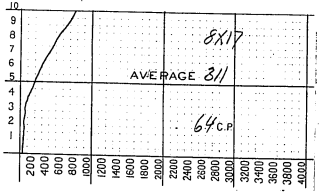


2502 hours –

983 Carbon forms double cover B. Aug 10, 1882

984 Day run a Lamps Aug 14, 1882.

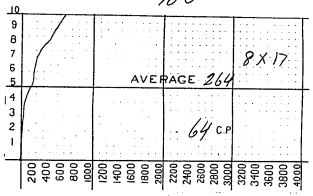
984



777 hours

No 985 Night runs A. Lamps Aug 14, 1882.

985



986 Weighed carbons Aug 15, 1882.

987 " " " 15, 1882.

988 " " " 15, 1882.

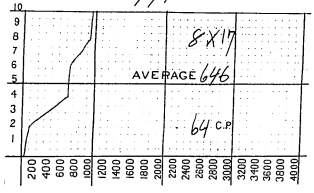
989 " " " 15, 1882.

990 " " " 15, 1882

991 J Aug 15, 1882.

Regular nickel forms.

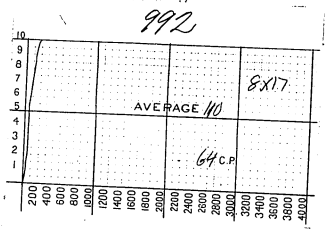
991



1615 hours –

No 992 Regular 6 nickle forms. Aug 15, 1882.

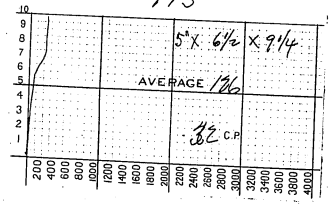
992



993 Regular 8 nickle forms Aug 15, 1882.

1 Sheet

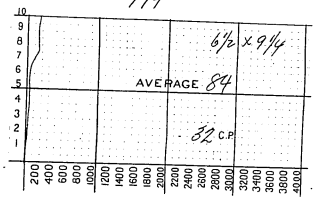
993



No. 994 5" inch 6½ X 9¼ Aug 16, 1882.

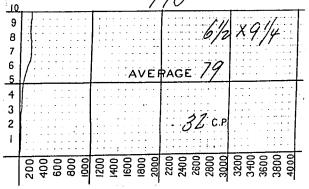
Forms immersed in kerosene oil with standard solution 10g terchloride to one gallon of kerosene oil, Carbons malt immersed.

994

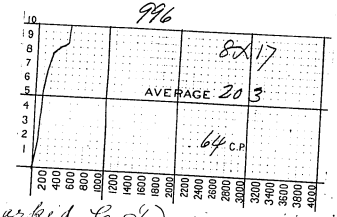


995 5 in. fibres 6½ X 9¼ Aug 16, 1882.
Carbonized in regular carbon forms

995



No 996 Carbons from carbon forms Aug 16, 1882.

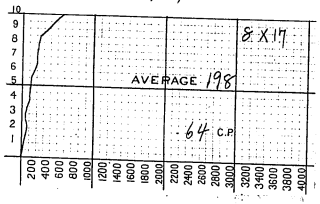


50% lm.

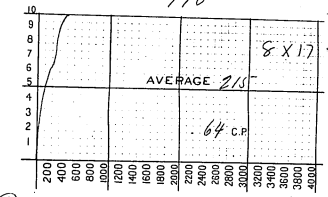
marked C. F.

997 Day run A. Lamps Aug 15, 1882

Sheet

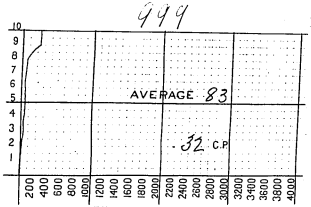


No 998 Night run A. Lamps Aug 15, 1882.



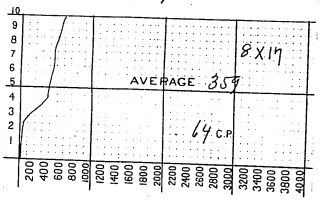
999. Fibres placed in furnace at low heat on tin plate and dried so as to remove moisture Aug 17, 1882.

1000. 5" 6½ X 9¼ Fibres run through in carbon forms in double covers. Carbons immersed in standard oil. Aug 17, 1882.



No. 1000 Day run Aug 16, 1882. A Lamps

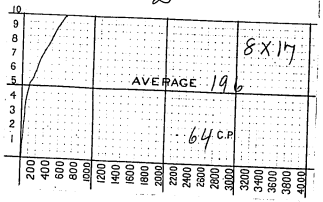
1



2 – Night run A. Lamps Aug 16. 1882.

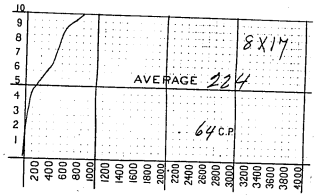
Sheet

2



No 3 Day run A Lamps Aug 17, 1882.

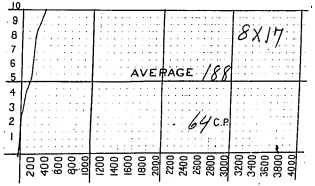
3



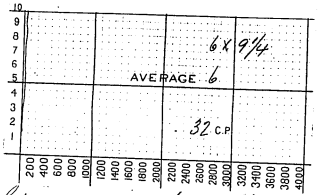
4 Night run A Lamps Aug 17, 1882.

Sheet 1

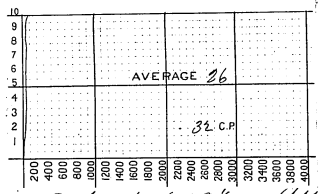
4



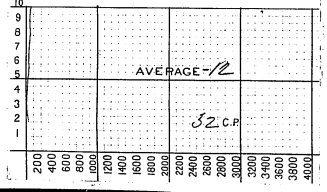
No 5 Day run A. Lamps 6 x 9¼ Aug 18, 1882.



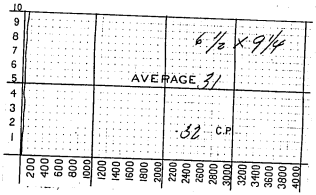
6 Night run 6 x 9¼ Aug 18, 1882.
6



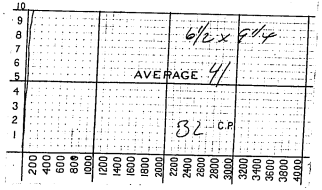
7 Day run A. Lamps 6 x 9¼ Aug 19, 1882.
7



No 8 10 candle lamps put up Aug 22, 1882 to 32, P.H.D. left on side of lamps for three (3) weeks and then sealed off.

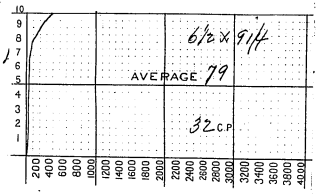


9 Day run A Lamps Aug 21, 1882
6 1/2 x 9¼



No 10 10

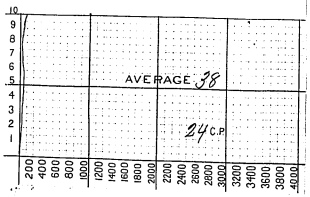
Night run A. Lamps 6½ x 9¼ Aug 21/1882



6

11 Day run A Lamps Aug 21, 1882.
6½ x 9¼

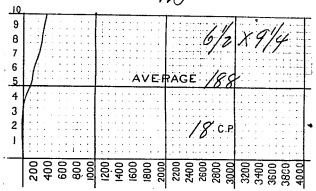
11



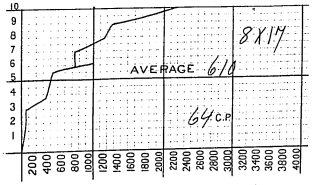
No 12

Night run A. Lamps 6½ x 9¼ Aug 21, 1882.

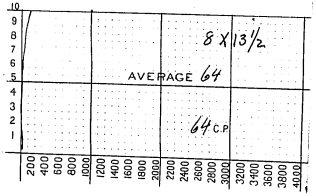
12



10/13 Lamps run off regular & blue entirely worked out of Bulbs & worked up to bulbs showing a clear white then immediately draw switch & seal off without current.



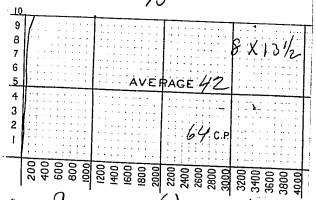
No 14 Fibre boiled in distilled water for 30 minutes & then immersed in Kerosene (Hot) for 1 hr.



6

15 Fibres boiled in distilled Water for 1 hour and then immersed in Turpentine for 1 hour.

15

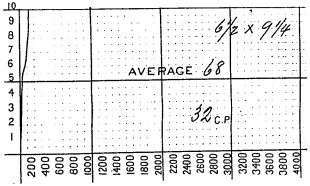


16 Carbons on Inside Parts boiled for 30 minutes in Distilled Water.

No 17 Carbons on Inside Parts Boiled for 30 minutes in Distilled Water & then immersed in Kerosene for 30 minutes.

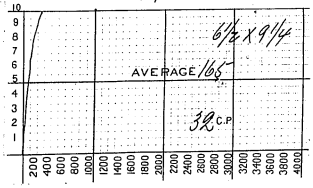
18 Double cover (No 2)

18



19

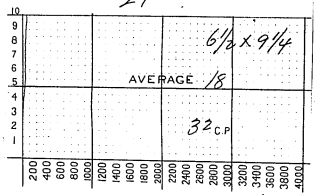
19



20 —

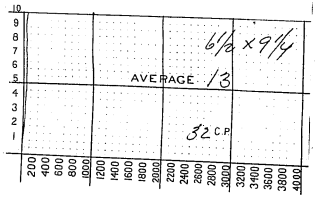
No 21

21



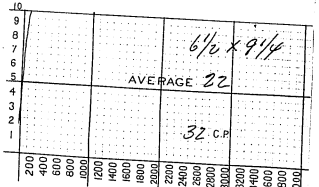
22

22



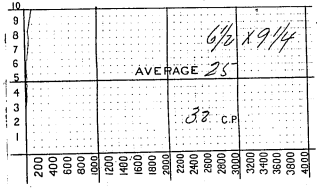
23

23



No 24

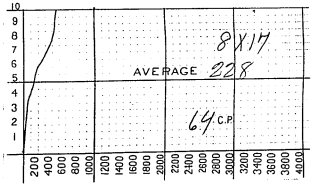
24



25

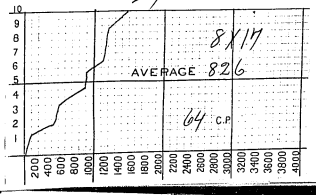
26

26



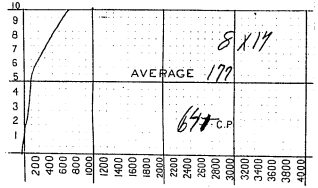
27

27



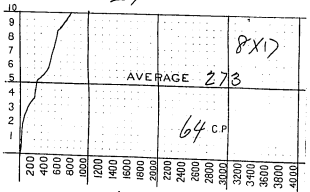
No 28

28



29-

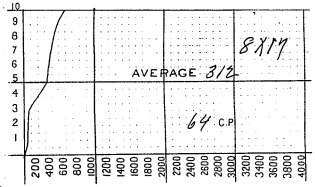
29



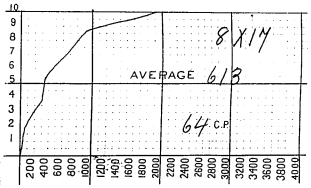
Regular nickel forms bottom of piles 8 X 17 immersed in oil.

No 30 Day run A. Lamps Aug 22, 1882

31

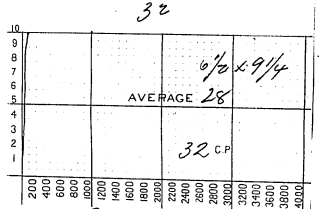


31- Night run A. Lamps Aug 22, 1882.

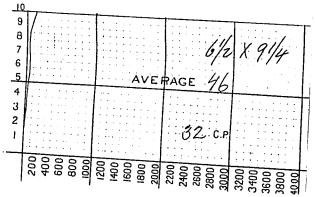


No Daytrun A lamps Aug 22, 1882.
32 6½x9¼ Carbons

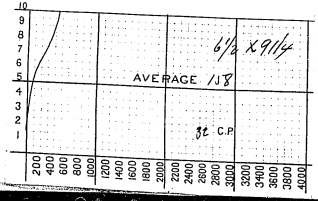
32



33 Night run A. 6x9¼ Lamps Aug 22, 82

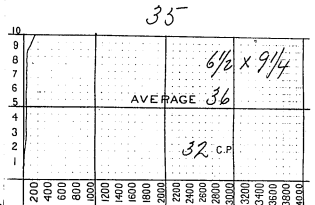


34 –



No 35 –

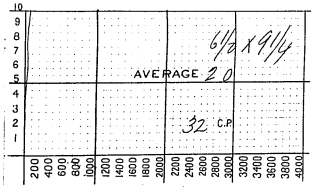
35



From top of piles (No. 3)

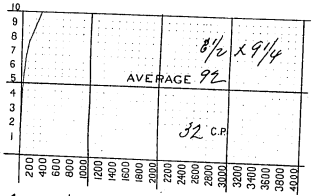
36 –

37 –



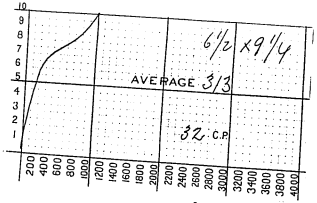
Carbon forms - top of piles - base with raised edges 6½ x 9¼
not immersed in oil.

No 38 -



Carbon forms bottom of piles 6½ x 9¼

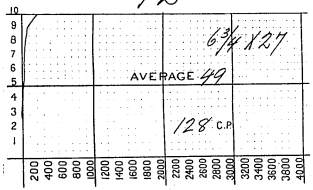
6 39 - (No 4) Carbons from top of piles
Carbon forms 6½ x 9¼



40 -

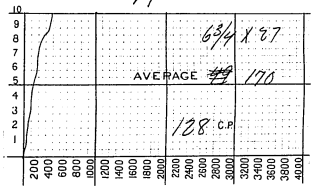
No 41 -

42



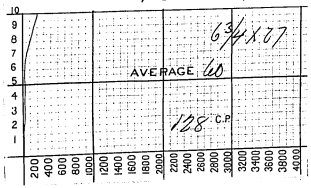
4 2 -

41



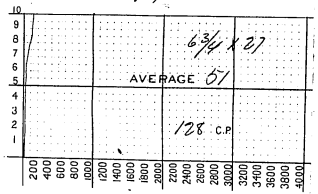
4 3 -

43



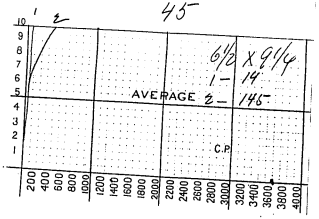
No 44

44



3, 45 - 8 carbon forms on top of Nickel forms in small covers (regular) 6½ x 9¼ not in oil.

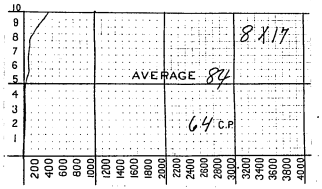
45



4 Set 2 worked by Howell.

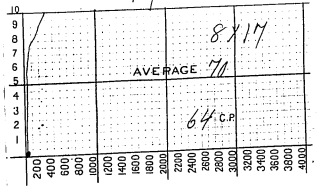
No 46 - Day run A, Lamps Aug 23, 1882.

46



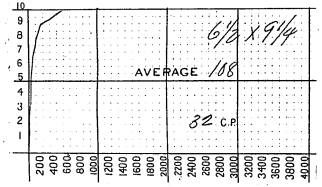
47 - Night run A Lamps Aug 23, 1882.

47



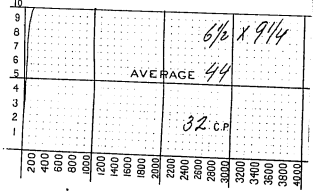
No. 48

48



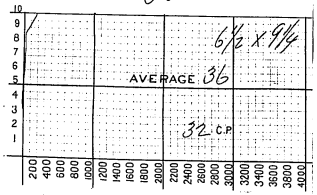
49 – From top of piles (no. 5).

49



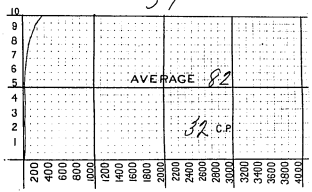
50 From bottom of piles (no 5)

50



No 51

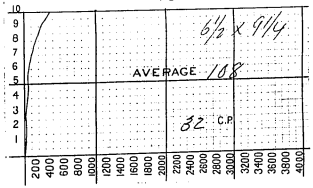
51



Double cover burnt cotton main body of carbons 6½ X 9¼ immersed in oil. Worked by Howell.

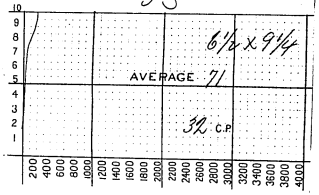
52

52



Carbon forms – tops of piles 6½ X 9¼ immersed in oil. Worked by Howell.

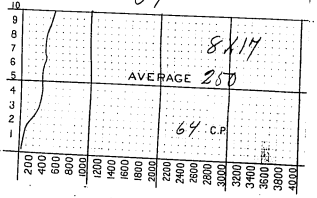
53



From bottom of piles (no6)

39. 54

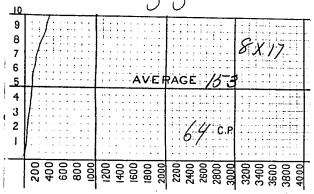
54



Regular nickel forms - top of piles 8 X 17 immersed in oil.

4

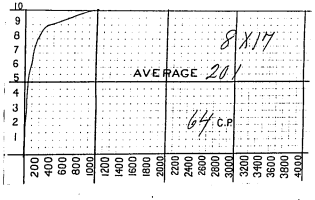
55



Regular nickel forms bottom of piles 8 x 17 immersed in oil.

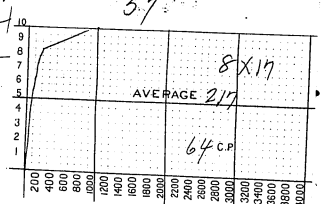
no56 - Day run A Lumpes Aug 24 1882.

56



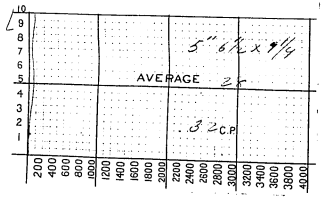
No 57 night runs a Lamp @ Aug. 24, 1882.

57



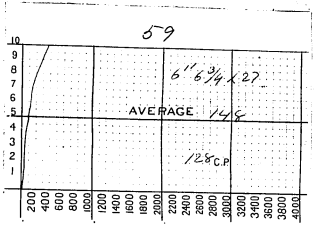
No 58 night runs a Lamp 6 X 9 1/4 Aug 24/82

58



No 59

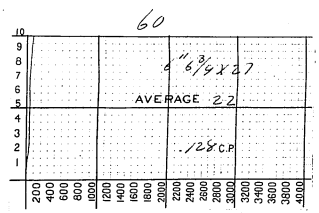
59



Regular nickel forms tops of piles 6 3/4 X 27 immersed in oil.

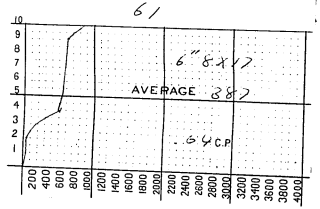
60

60



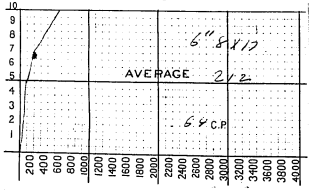
No 61 Lamps run off regular up to time blue is worked Clamps & then take off current & allow pumps to exhaust 10 minutes and then deal off with out Current.

61



62 Bulbs washed with Hydrogen

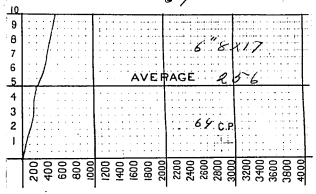
62



No 63 Bulbs washed with gasoline.

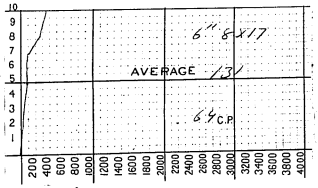
64 Day run a Lamps Aug. 25, 1892.

64

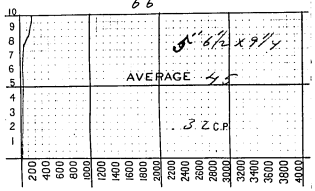


65 Night run a Lamps Aug 25, 1892.

65

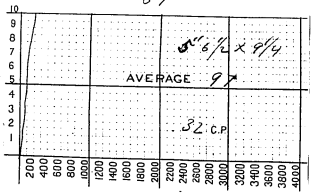


No 66



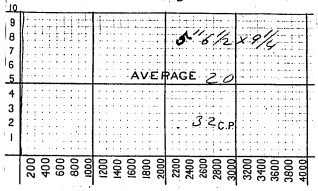
3. Anthracene in bottom of cover 6½ x 9¼ immersed in oil newly prepared. Worked by Howell

67-



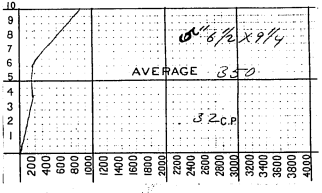
Three covers centrical of piles carbon forms 6½ x 9¼ immersed in newly prepared oil.

No 68



From top of piles 3 covers (No 8)

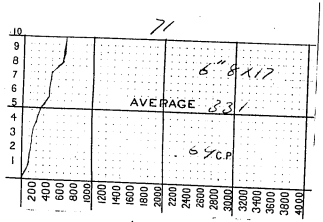
69



Three covers carbon forms 6½ x 9¼ bottom of piles.

70-Lumps marked XX filled with C.C.

110
71 Daytun A Lamps Aug 26. 1882.

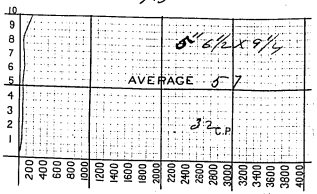


72 Carbons dipped in gasoline by Mr E.

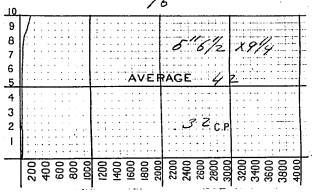
73 Clamps painted pink by Mr Edison

74 Clamps painted with photo chloride tin (mixed with water)

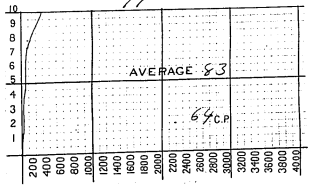
75 From top of piece.
Carbon forms Sticks in small cover same as regular nickel forms - - Clayed in regular way



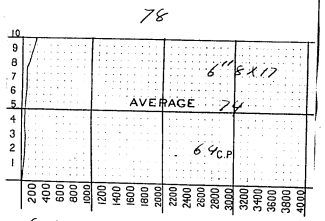
no
76 From bottom of piles.
Carbon forms stached, straight, per #75



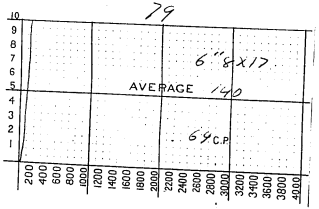
77 Edison's order marked E H Aug 28, 82.



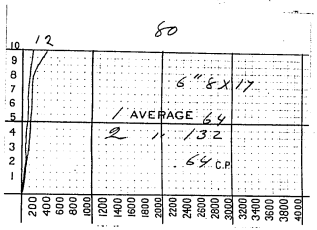
No 78 Edison's order marked E Aug 28, 1882.



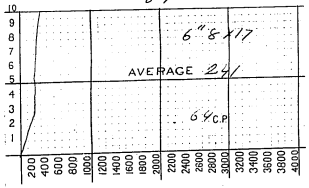
No 79 Edison's order marked X Aug 28, 1882.



No 80 Edison order marked S Aug 28, 1882.

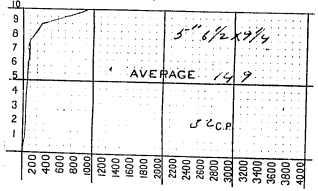


81 Edison order marked K Aug 28, 82.



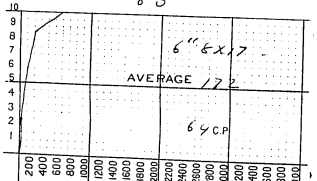
No 82.

82



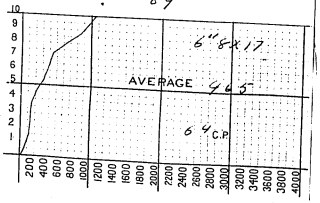
83 Day run a Lamps Aug 28, 1882.

83



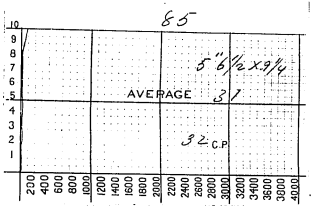
84 Night run a Lamps Aug 28, 1882.

84



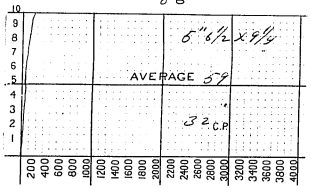
No 85 Day run A Lamps 6½ x 9¼ Aug 28 1882

85



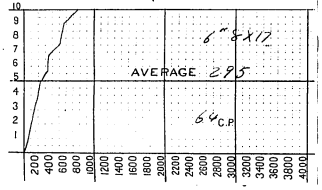
86 2 Carbons in one form 6½ x 9¼ Aug 29, 1882.

86



No 87 2 Carbons in one form 8x17 Aug 29 82.

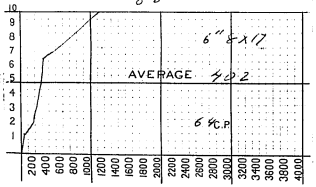
87



Worked by Howell.

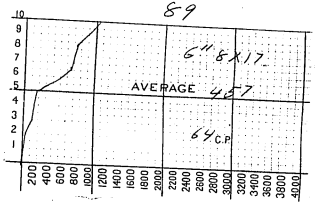
88 Day run A. Lamps Aug 29.1882.

88



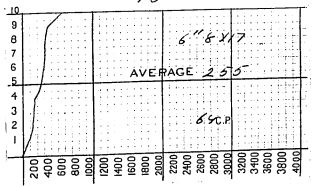
No 89 Night run A Lamps Aug 29, 1882.

89



90 Lamps with bulbs attached containing P_2O_5 left on 4 weeks when they were sealed off and Lamps set up. Aug 30, 1882.

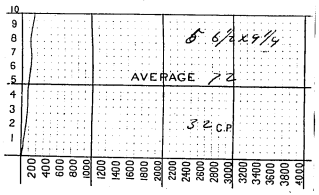
90



No 91 - (no 11) carbon formed double Cover 8x17 Centre of piles.

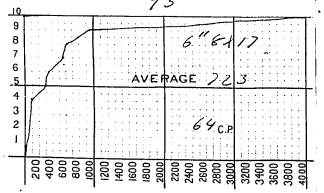
92 (no 12) carbon formed tin cover 6½x9¼ Centre of piles.

92



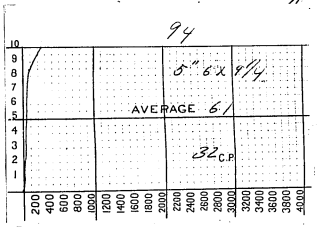
93 (no 11) main body of carbons 8x17

93



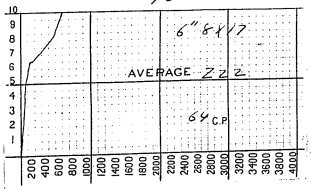
No 94 Lamps worked by Mr Edison order no changed from 36 6x9¼ fibres aug 30, 1882.

94

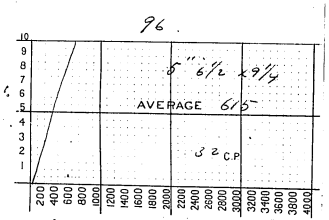


95- Lamps worked by A. Heakman. 8x17 fibres aug 30, 1882.

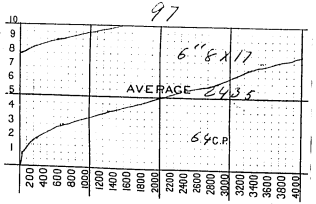
95



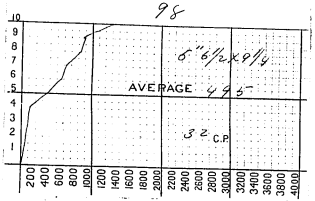
No 96 Lamps worked by Mr Holzer 6½ x 9¼ fibres aug 30, 1882.



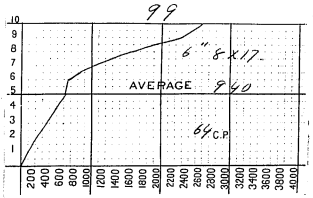
97 (no 13) Carbon forms two carbons from one form 8X17



No. 98 (no. 13) carbon forms 2 carbons from one form 6½ x 9¼

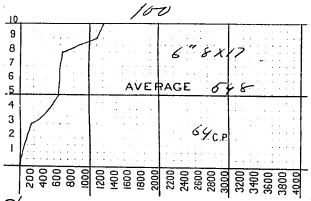


99 Regular nickel forms. top of piles 8 x 17



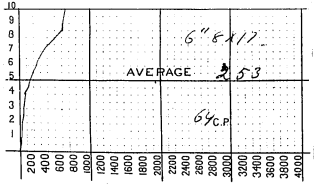
2/9 No 100 Regular nickel forms bottom of piles 8X17

100



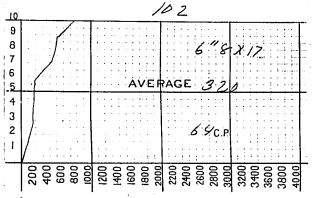
No 101 Day run A Lamps Aug 30, 1882.

101



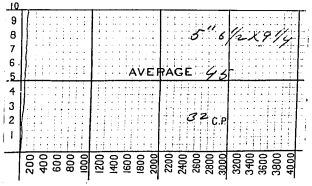
No 102 Night run A Lamps Aug 30, 1882.

102

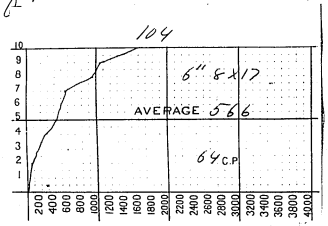


103 Lamps 6½ X 9¼ worked slowly until on 3rd line then worked one high fill blue is off clamps & left burning pretty high until solid then sealed off.

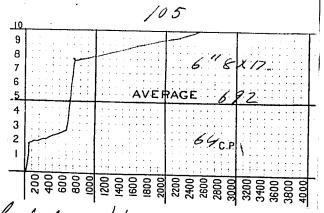
103



No 104 Regular nickle forms - top of piles

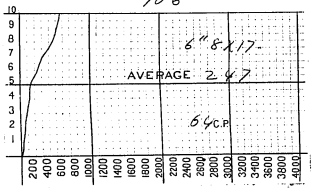


No 105 - Reg nickel forms bottom of piles

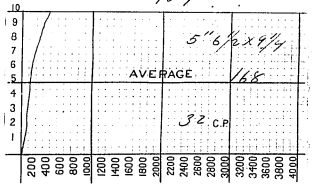


worked by Harvell.

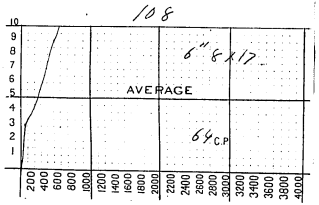
No 106 • (no 14) Double cover carbon forms 8X17



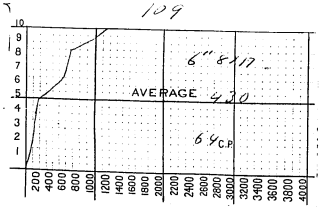
107 Tri cover Carbon forms, 6"x9"



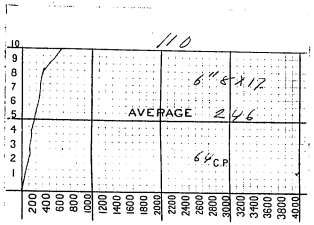
No 108 Fibres carbonized straight - worked by Rapelby Sept 1, 1882.



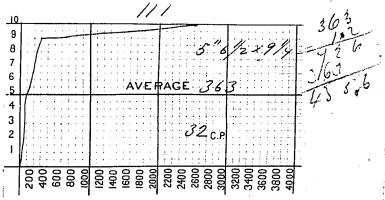
109 Day run A Lamps Sept 1, 1882.



No 110 Night run A Lamps Sept 1, 1882.

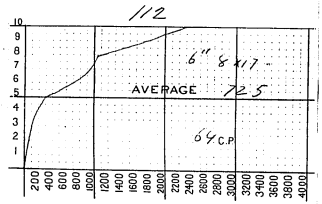


111 295 fibres 5" 6½ x 9¼ carefully selected & considered perfect as to cutting Sept 2, 1882.

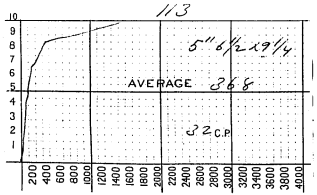


Worked by Howell

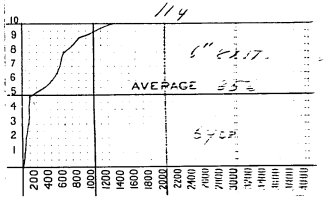
No 112 2 fibres in one form carbon form 8x17



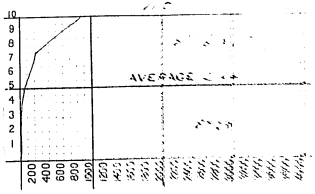
113 2 fibres in one form carbon forms 6 1/2 x 9 1/4



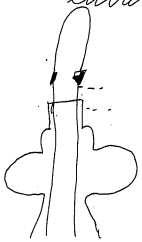
No 114 Regular nickel form tip of piles 8 x 17

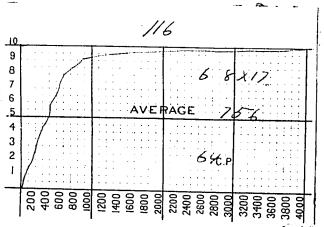


115 Regular nickel form piles 8 x 17

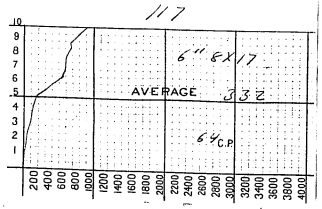


No 116 After carbons are plated in clamps solution in troughs lowered to point marked and current reversed

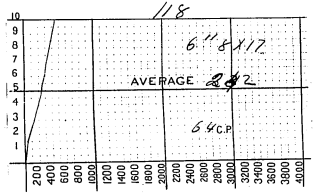




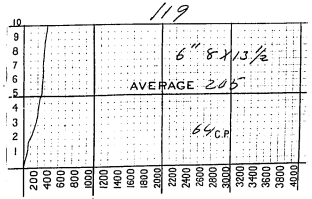
117 Fibres carbonized straight worked by Holzer Aug 30, 1882.



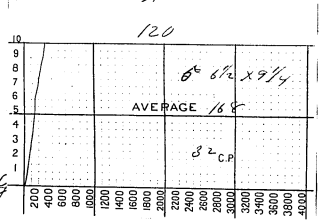
No 118 Day run A Lamps Sept 2, 1882.



119 Cover same style asmo 11 used. 8X13½ fibres placed in carbon forms before baking forms run through in regular way.

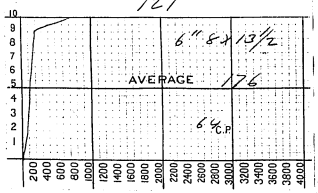


No 120 Cover same style as No 12 used 6½ x 9¼ fibres placed in forms (carbons) before baking run through in regular way.

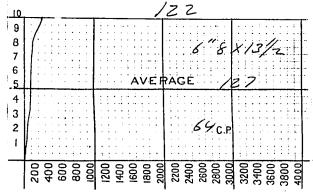


121 Reg

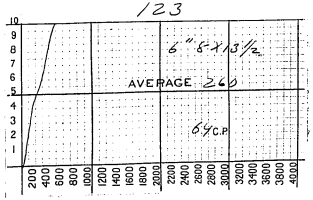
121 Regular nickel forms same as Aug 31 st 1882. top of piles.



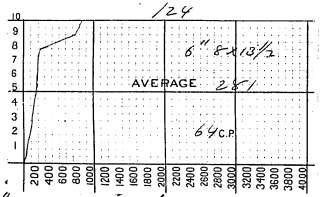
No 122 Regular nickel forms same as Aug 31st 1882 bottom of piles



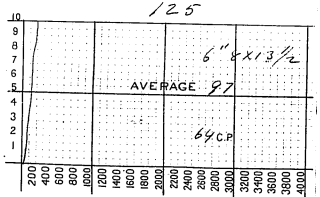
123 Regular nickel forms 400 ~~forms~~ covers 8 x 13½ from top of piles



No 124 Regular nickel forms
400 form covers 8 x 18 1/2 bottom of pile.



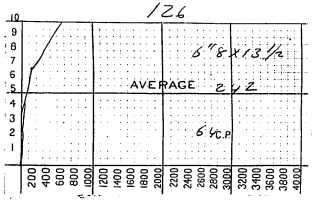
125 Lamps marked No. 1. Sept 4, 82.



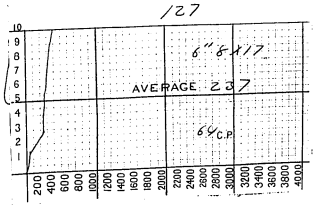
Bulbs direct from factory washed with solution oil and terchloride.

No 126 Lamps marked no 2. Sept. 4, 1882.

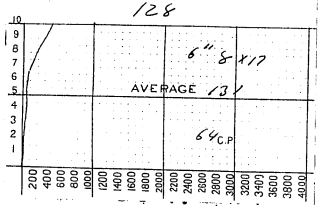
Bulbs direct from factory washed in distilled water and then with prepared solution of oil and terchlorcde.



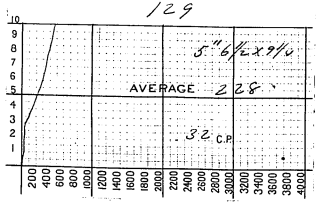
127 Day run a Lamp Sept. 4, 1882



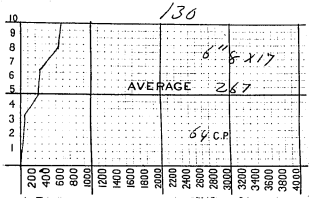
No 128 night run A Lampe Sept 4, 1882.



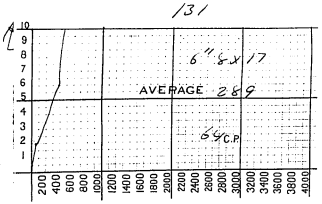
129 100 fibres 5" 6½ x 9¼ selected by J J Bradley per order F R. Upton. Sept. 6, 1882.



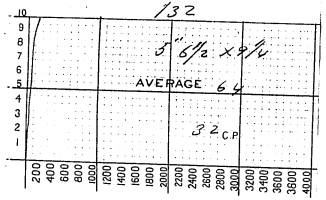
No 130 Day run A Lampe Sep 5, 1882.



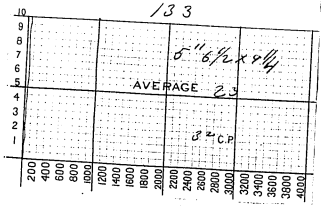
131 Night run A Lampe Sep 5, 1882.



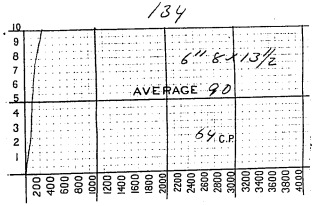
No 132 Daycrun A Lamps 6½x9¼ Sept 5, 1882.



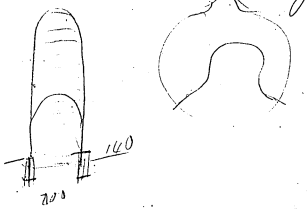
133 night run a Lamps 6½x9¼ Sept 5, 1882.



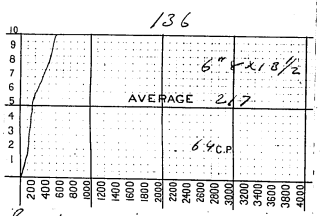
No 134 Lamps marked 4, H. Sept 3, 1882. Carbons immersed in hydrofluoric acid for 10 hrs and then washed in deluted ammonia & then in water for 3 hours and then dried, & run through in regular manner.



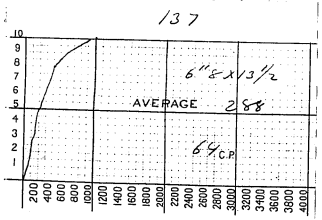
135 Switch put in when small Bubbles are in tube otherwise regular.



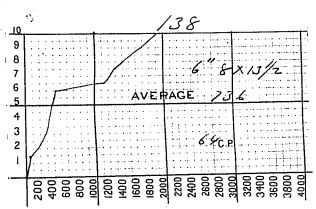
No 136. Switch put in when large bubbles are in tube otherwise regular.



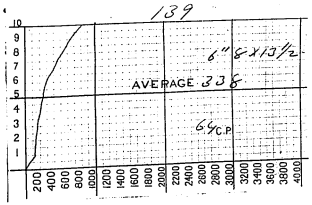
137 – Switch in at start otherwise regular.



No 138 Switch in and one lamp cutout at start otherwise regular.

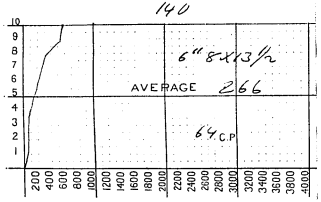


139 – Switch in and two lamps cut out at start otherwise regular



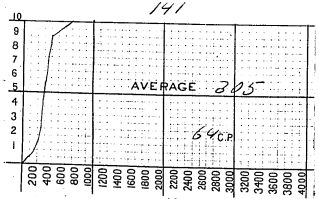
No 140 Switch in and 3 lamps cut out at start otherwise regular

140



141 Switch in and 4 lamps cut out at start otherwise regular.

141



142 Lamps cut out 1 at a time on pin heads - otherwise regular.

No 143 Lamps cut out 1 at a time on small bubbles otherwise regular.

144 Lamps cut out 1 at a time on large bubbles.

145 Lamps cut out 2 at a time on solid tube otherwise regular.

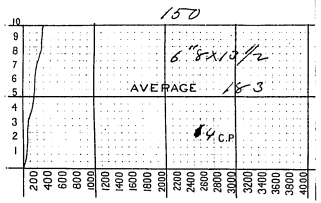
146 Lamps cut out 3 at a time on solid tube otherwise regular.

147 Lamps cut out 2 at a time on small bubbles otherwise regular.

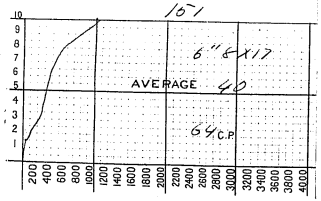
148 Lamps cut out three at a time on small bubbles otherwise regular.

149 Lamps cut out 2 at a time on large bubbles - otherwise regular.

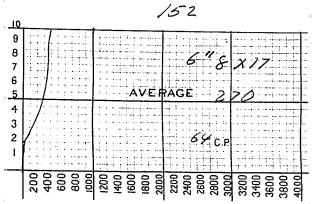
No
150 Lamps cut out 3 at a time on large bubbles otherwise regular



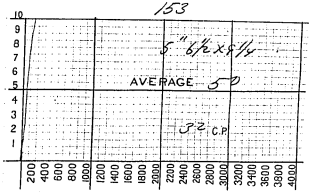
151 Day run a Lamps Sept 6, 1882.



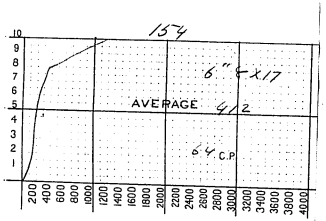
No
152 Night run a Lamps Sept. 6, 1882



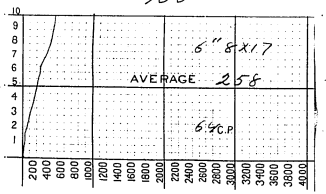
153 - Lamps put on pump & after solid tube was obtained current put on to carbon up to the time the blue appeared & left burning with blue on clamp and lamp taken off immediately after blue disappears.



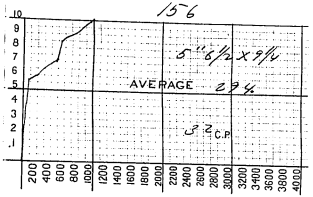
No
154 Day run Sept 7, 1882 A Lamps.



155 night run A Lamps Sept 7, 1882

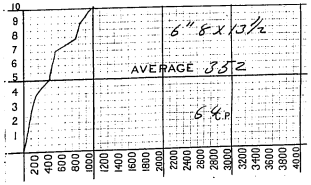


No
156 night run Reg. 6 1/2 X 9 1/4 Sept 7, 1882



157 2 carbons in one form
Carbon forms
Forms fibred before being baked 8X13 1/2

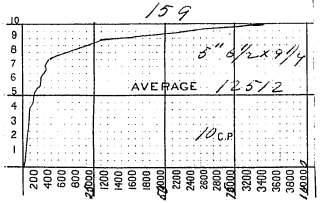
157



No. 15-8 2 carbons in one form carbon forms formed fibred before being baked 6½ x 9¼

15-9 - 20. A Lamps 6½ x 9¼ One lamp selected at random from orders 25, 35, 45, 48, 50, 51, 63, 66, 69, 86, 91, 92, 98, 107, 111, 120, 132, 133, 153, 4156 and set up ~~at~~ 10 candles.

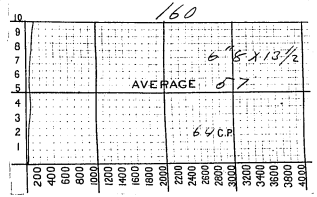
159



6 / 1251/2
209 hours

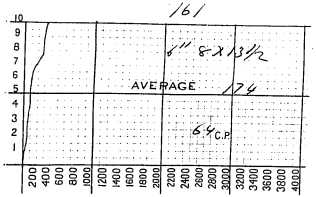
No. 160 Day run A Lamps Sept. 11, 1918.

160

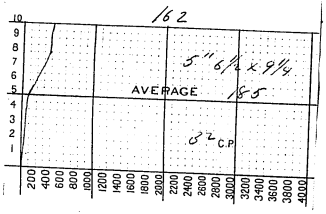


161 - Night run A Lamps Sept 11, 1918.

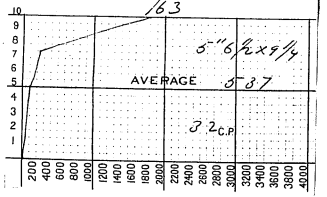
161



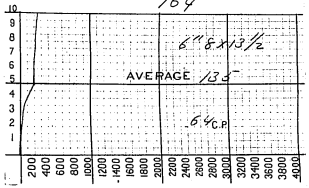
No 162 Day run a Lampe 6½ x 9¼ Sept 11, 82.



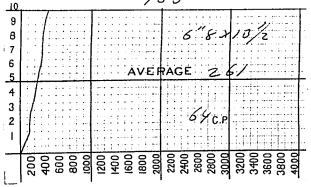
163 Night run a Lampe 6½ x 9¼ Sept 11, 1882.



No 164 Day run a Lampe. Sept 12, 1882.

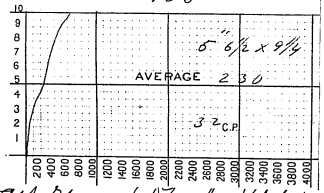


165 Night run a Lampe Sept. 12, 82.



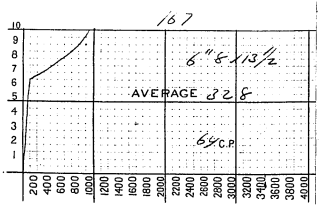
No 166 Style of cover no 13 Aug. 3, 82.
Carbon forma. 1 fibre in form 6½ x 9¼
Base and raised edges all one piece

166



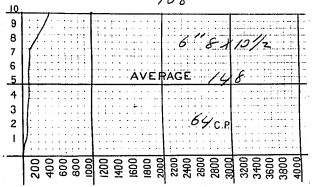
167 – Day run a Lamps Sept 13, 1882

167



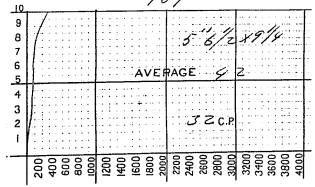
168 Night run a. Lamps Sept. 13, 82.

168

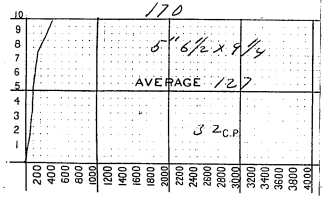


169 Day run a Lamps Sept 13, 82.
6½ x 9¼

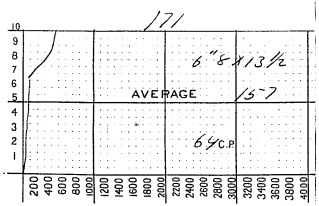
169



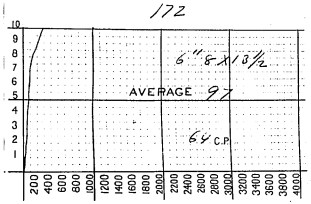
No 170 night run a Lamps 6½x9¼ Sept 13, 1882



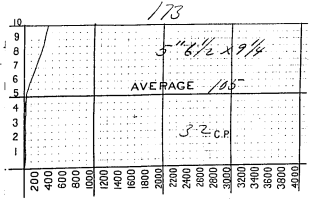
No 171 – Day run a Lamps Sept 14, 1882;



No 172 night run a Lamps Sept 14, 1882

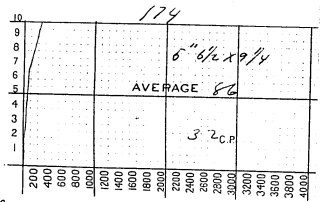


173 Day run a Lamps 6½x9¼ Sept 14, 1882;

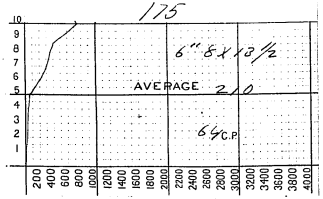


No
Sept 14, 1882.

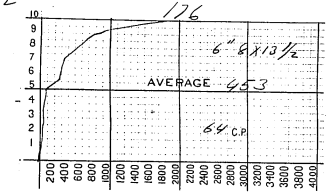
174 Night run a Lamps 6½ x 9¼



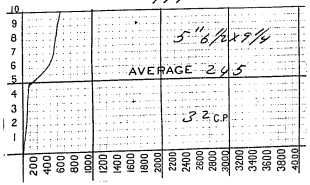
175 Lamps marked Eureka worked off from pumps without drying on the dryer or heating on the heater worked by Daxelby.



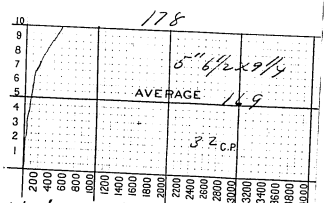
176 Carbon forms large covers clayed in regular way 2 fibres in one form forms from top of piles 8 x 13½



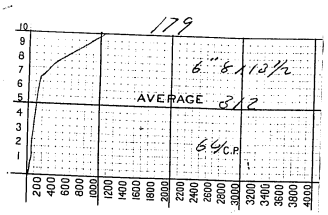
177 Carbon forms cover (No 13) base and raised edges one piece. one fibre in form from top of piles 6½ x 9¼



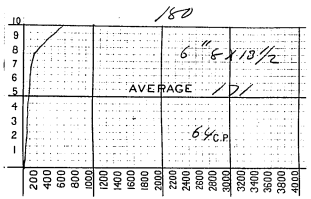
No 178 Carbon form cover (No 13) base and raised edges one piece one fibre in form. from centre of pile 6½ x 9¼



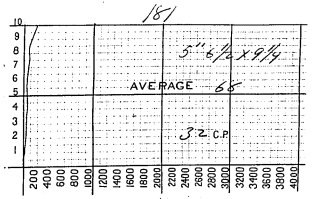
179 Day run 4 Lamps Sept. 15, 82.



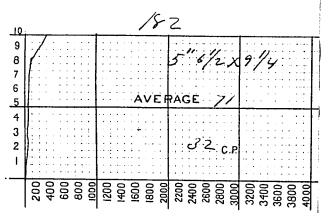
No 180 night run 4 Lamps Sept 15, 82.



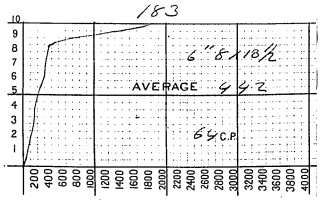
181 Day run 4 Lamps 6½ x 9¼ Sept 15, 82.



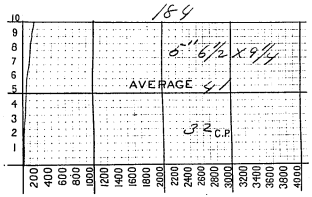
No 182 night run A Lamp 6½x9¼ Sept 15. 82.



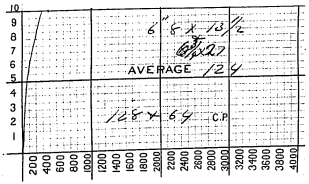
183 Day run A Lamps Sept 16, 1882.



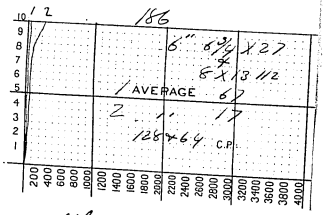
No 184. Sept 16, 1882 Day run A Lamps 6½x9¼



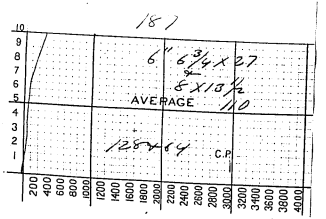
185 Reg lamps on pumps rapidy for sealing off. reworked with reversed current



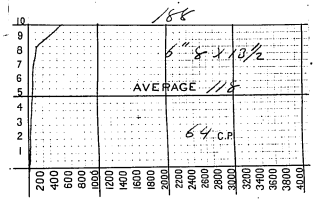
No 186 Lamps with mercury in exhausting tube.



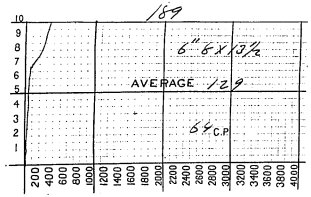
187 Lamps without mercury in exhausting tubes.



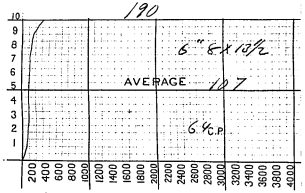
No 188 Day run a Lamp Sept 18/1882.



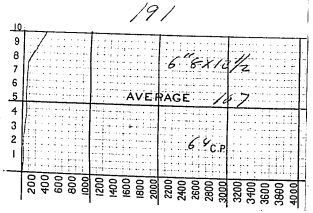
189 Night run a Lamps Sept 18 82.



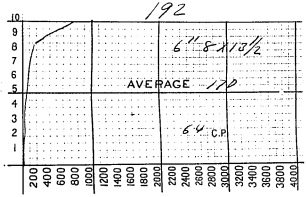
No 190 Small duplicate of regular run new style covers 2 fibres in form 8 x 18 1/2



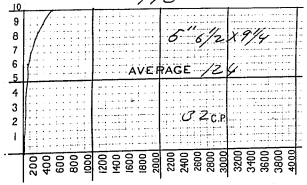
No 191 Day run a Lamps Sept 19 1882.



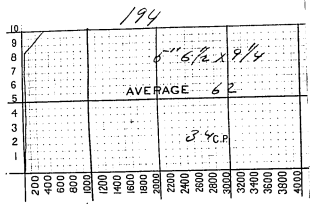
No 192 Night run a Lamps Sept 19, 1882.



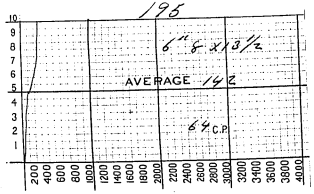
No 193 Day run a Lamps Sept 19, 1882.



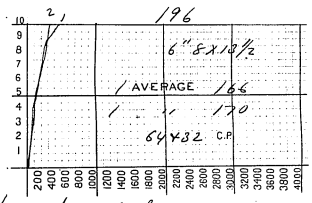
No 194 Night run a lamps 6"x9¼" Sept 19 1882.



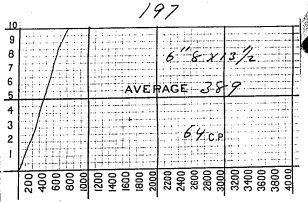
195- Same as No 190



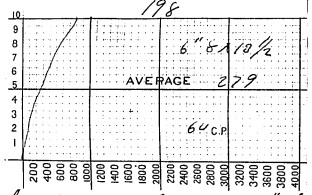
No 196 Lamps from new pumps with straight fall Sept 21, 1882.



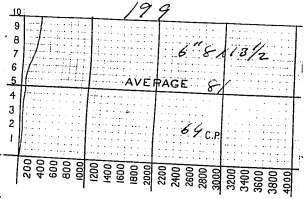
197. Lamps with exhausting tube one foot longer than regular run off in regular way Sept. 21, 1882.



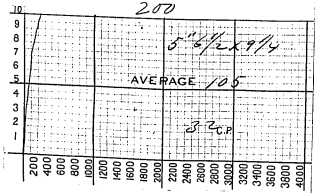
No 198 Day run a Lamps Sept 20, 82



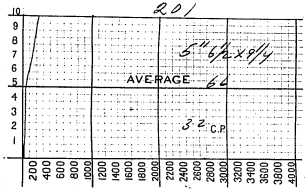
199 Night run a Lamps Sept 20, 82.



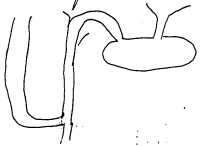
200 Day run a Lamps 6 1/2 x 9 1/4 Sept 20 1882,

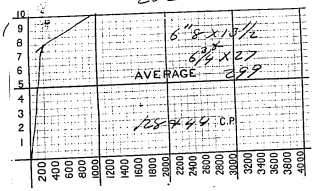


201 Night run a Lamp 6 1/2 x 9 1/4 Sept 20 82

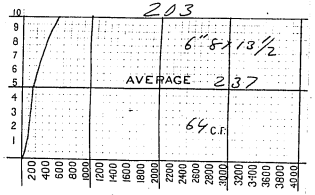


202 Lamp from this style pumps, Sept 21/82,

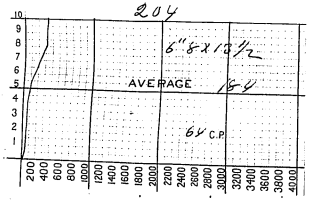




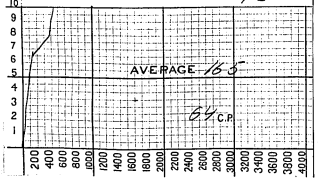
No 203 - Same as no 190.



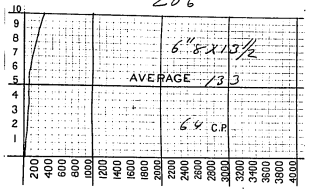
204 New run of carbons Sept 22, 1882.



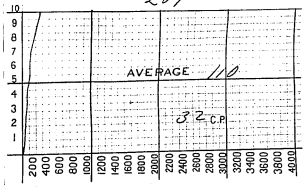
205 Day run a Lamps Sept 21, 1882



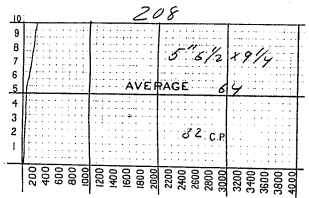
No 206 night run a Lamps Sept 21, 1882.



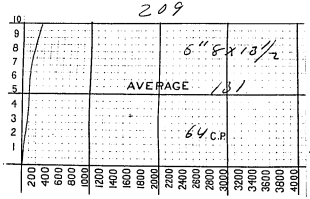
207 Day run A Lamps 6½x9¼ 9/21/82



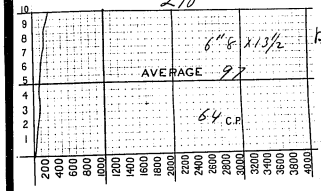
No 208 night run a Lamps 6 1/2 x 9 1/4 Sept 21, 1892.

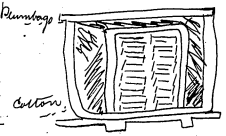


No 209 Day run a Lamp 9/22/892.

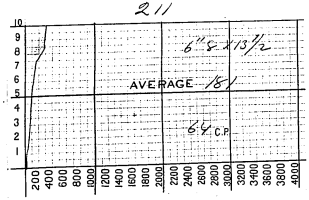


No 210 - Small duplicate of regular run 2 fibres to forms. 8 x 13 1/2 New style cover No 2



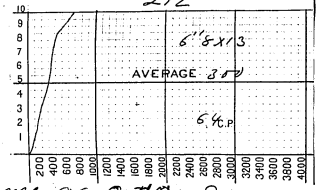


211 Small covered carbon forms 2 fibres in form 8 x 13 1/2 Phosphorus pentoxide in bottom of cover.



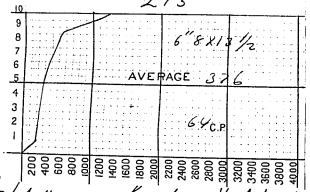
No 212 Same as order 210

212



213 Same as order 210

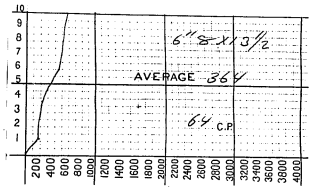
213



214 Night run a Lamps Sept 22, 1882.

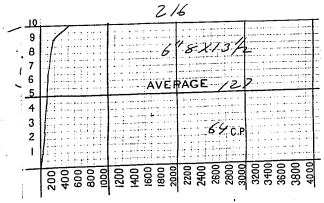
No 215 - B. Rtr fibres old Stk. surrounder on all sides by 0 2 0 - in which was kept in a warm dry place for 12 da. Fibre carbonized Sept. 27, 1882

215



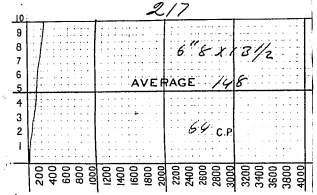
216 - Lamps ordered to be put up by Mr Edison Sept. 28, 1882 Regular lamps

216



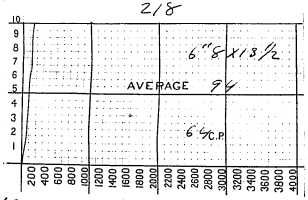
No 217 Day run A. Lamps Sept 28, 1882.

217



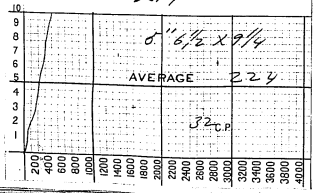
218 Night run A. Lamps Sept 28, 82.

218



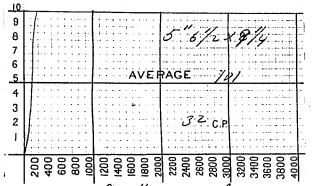
219 Day run A Lamps 6½x9¼ Sept 28, 82

219



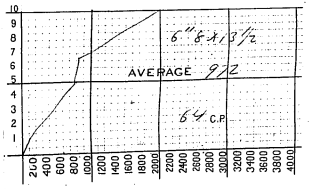
No 220 Night run A Lamps 6½x9¼ 9/28/82.

220



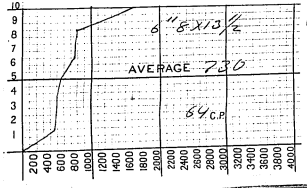
221 Day run A. Lamps Sept. 29, 1882.

221



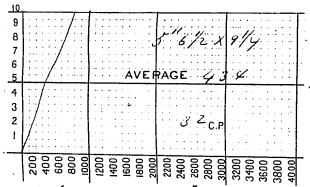
222 Night run A Lamps Sept. 29, 1882.

222

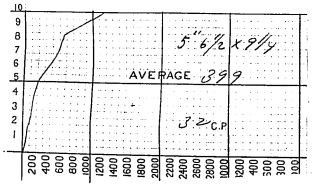


No. 223 Day run a lamp 6"x9¼ 9/29/82

223

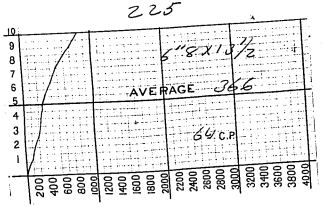


224 Nightrun a Lamps 6½x9¼ 9/29/82.



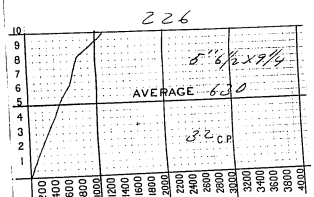
225 Day run A Lamps 9/30/82

225



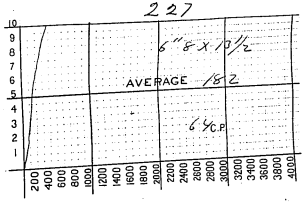
226 Day run A Lamps 6½x9¼ Sept 30, 1882.

226



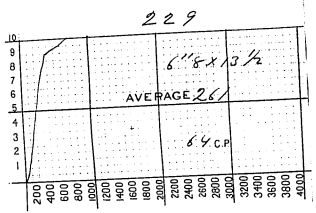
227 Lamps worked in regular way by 2. brown except they were sealed off high.

227

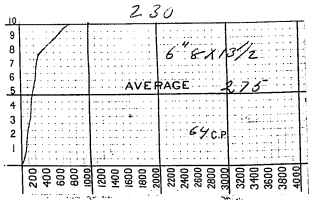


228. Set of 20 lamps 6½x9¼ to be reburned at 10 candles.

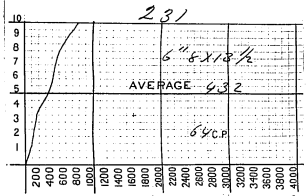
no 229 1000 8"x13½ 6" Inspected by machine —



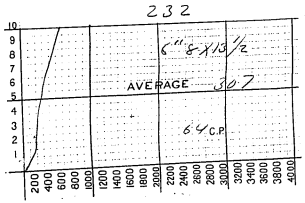
230 Lamps heated on dryer - heated by 4 - 32 candle lamps and left on for 45 minutes.



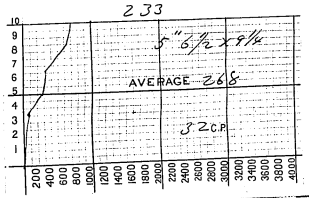
NW Day run a Lamps Oct 21 1882.
231



232 Night run a lamps Oct 2/82.

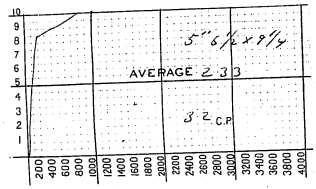


233 Day run a Lamps 6½x9¼ 10/2/'82



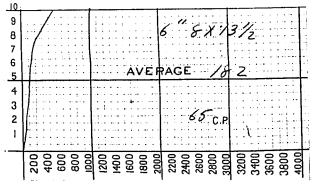
No 234 Night a. 6½ x 9¼ Oct 2, 1882

234



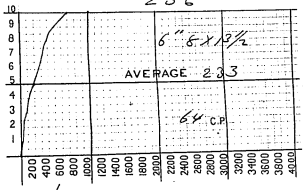
235 Lamps heated on dryer heated by 4 - 32 candle lamps for 2½ hr 3 hours —

235



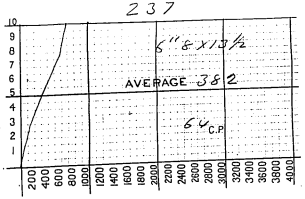
No 236. Lamps with bulbs attached containing P_2O_5 left on 8 weeks after which they were set up 10/4/82.

236



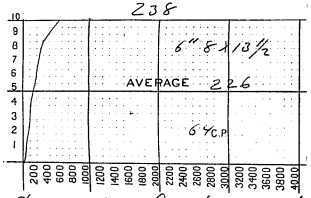
237 - Day run a lamps 10/4/82

237



2

No 238 night run A Lamps 10/3/82.

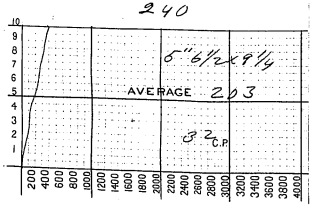


239 - Day run A. 6½ x 9¼ 10/3/82.

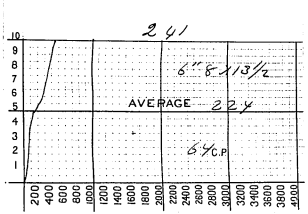
Sheet

Avg. amps 243
32 candles

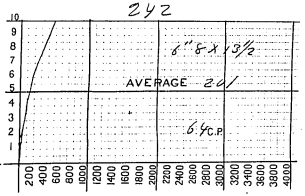
240 night run 6½ x 9¼ 10/3/82



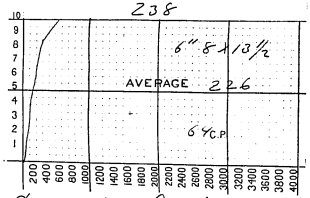
241 Lamps marked N. P.



242 - 10 regular carbons avg resist 285. Soaked in strong solution. Sugar in water and recarbonized. After recarbonization avg resist 241



2 No 238 night run A Lamps 10/3/82.

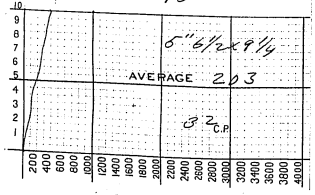


239 - Day run A. 6½x9¼ 10/3/82.

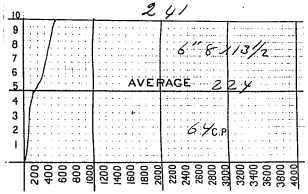
Check

Avg. mino 243
82 candles

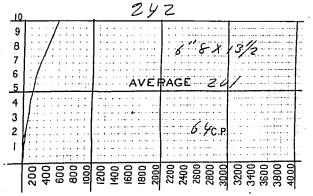
240 night run 6½x9¼ 10/3/82



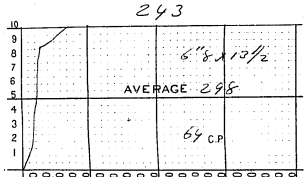
241 Lamps marked N. P.



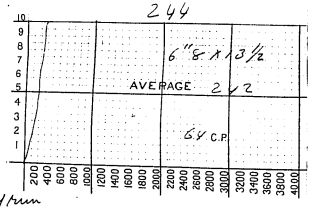
242 - 10 regular carbons avg resist 285 soaked in strong solution. Sugar in water and recarbonized. After recarbonization avg resist 241



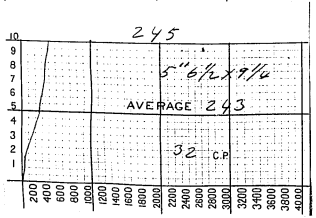
2 No 243 Day run a Lamps Oct 4, 1882.



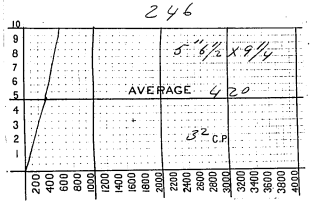
244 Night run a Lamp Oct 4, 1882.



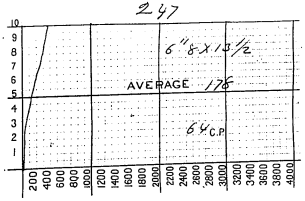
245 Day run a Lamps 6½ x 9¼ 10/4/82



No 246 Night run a. Lamps 6½ x 9¼ 10/4/82.

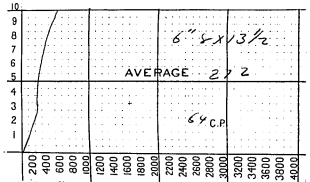


247 - Lamps heated on dryer - heated by lamps - left on one hour final temperature 150° Fahr -



No 248 Day run a Lamps. 10/5/82

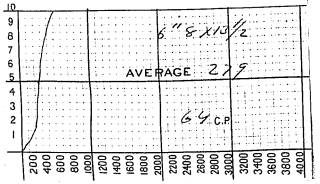
248



249 – Night run a. Lamps 10/5/82.

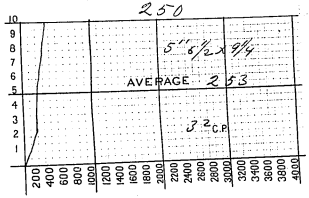
250 Day & night runs a Lamps 6½ x 9¼ Oct 7, 1882.

249



No 251 Carbons immersed in hot alum water Oct 6, 1882.

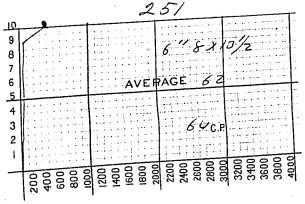
250



252 – Lamps considered poor vacuums

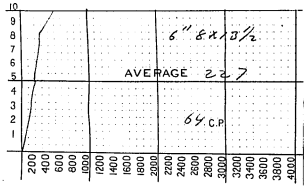
253 Lamps marked "Edison 1".
Lamps run off regular way but never working higher than about 125 Volts.

251



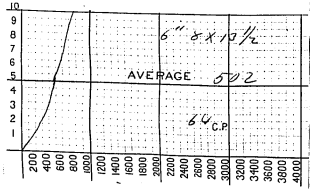
No 254 Lamps marked "Edison 2"
Lamps run off regular way with the exception of not connecting until the tube is solid.

254



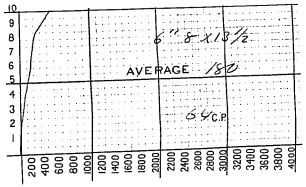
255- Lamps marked "Edison 3"
Lamps brought up to a dull red & then let run on clear tube for 1 hour and then brought up regular.

255



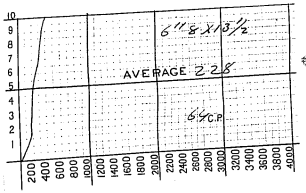
No 256 Lamps marked "Edison 4"
Lamps run off with wires not connected until solid tube is obtained when the current is put on for a few seconds, & again taken off until solid tube is again obtained & so on up to finish.

256

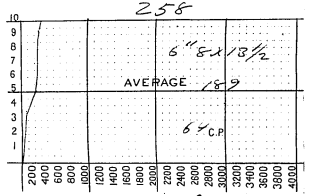


257- Day run a Lamps Oct 6, 1882.

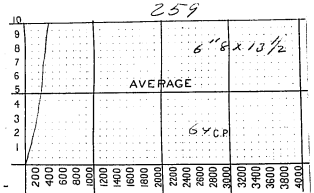
257



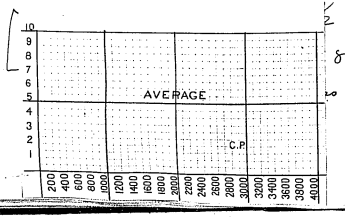
No 258 - Night run A Lamps 10/6/82.



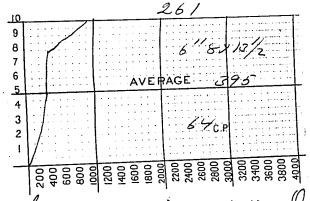
259 - Day run A. Lamps 10/9/82.



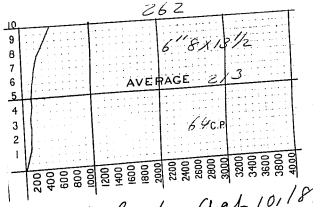
260 - Day run A. Lamps 10/9/1882.



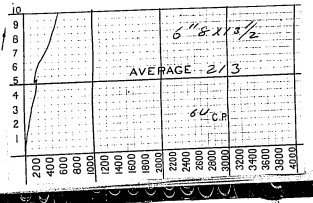
No 261 Night run A lamps 10/9/1882.



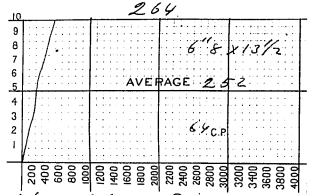
262 Same as order 25-5- Oct 10, 1882.



263 Day run A. lamps Oct 10, 1882.

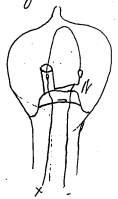


1 264 night run A. Lamps Oct 10, 1882.

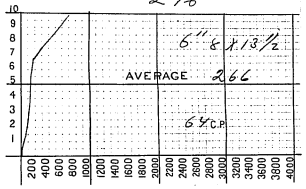


2 265, 266, 267, 268, 269, 270, 271
272, 273 & 274
2 B. fibres made in pairs from the same splint.

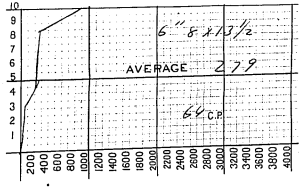
275 Lamps made with a copper tube surrounding the + clamp & connected to the – clamp – tube to come
2 just above top of clamp ittuse. –



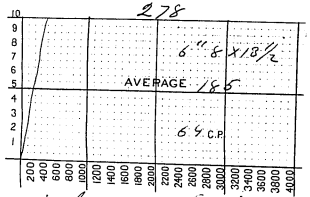
No 276 Lamps marked P
Parafine used instead of oil on stoppers on pimps



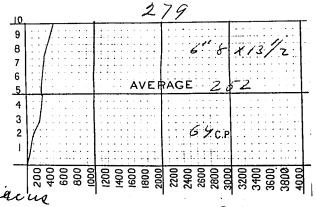
277 Same as 255 Oct 11. 1882.



2 No 278 Day run A Lamps Oct 11, 1882.

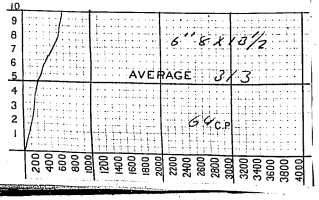


2 279 night run A. Lamps Oct 11, 1882.



2 280 Syracuse 255 Oct 12 1882.

280



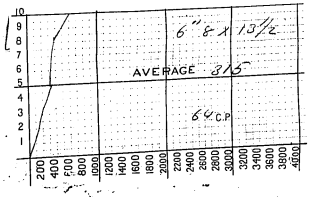
#281 Fibres soaked 15 hours in solution of sugar in water - about 30% sugar by weight -.

281, 282, 283, 284, 285, 286, 287 288, 289, 290.

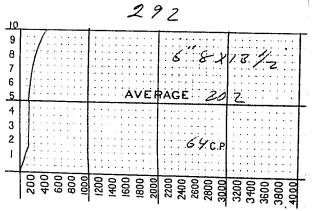
Fibres cut in pairs from the same splint. Oct 13, 1882. fibres 6x4 gs.

291 Day run A Lamps Oct 12, 1882.

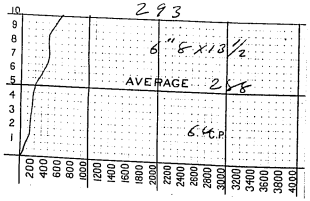
291



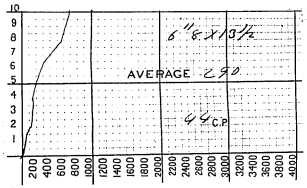
No 292 Night run A. Crisp Oct. 12, 1882



293 Same as 295 Oct 13, 1882.



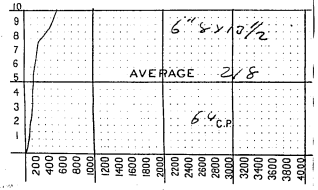
294 Day & night run Oct. 11, 1882.
set up at 1 candle for 8½ hours & then tested at 64 candles.



295 - Lamps from pumps with loose cotton wool in phosphorus cups.

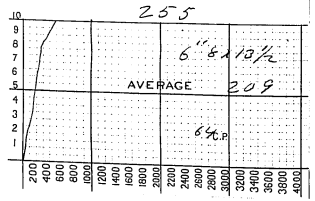
No 1296. A carbons 8X13½ twisted so that fronts of shanks face each other.

296



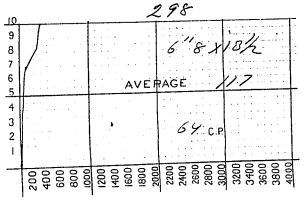
1297. Same as 255 - Oct 13, 1882.

255



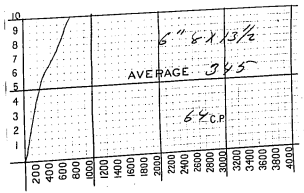
No 1298 - Day run A Lamps Oct 13, 1882.

298



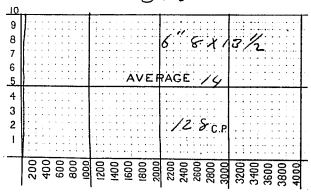
1299 - Night run A. Lamps Oct, 13, 1882

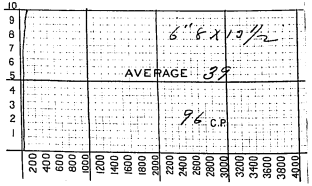
299



No. 1300 - Regulars set up at 128 candles
Oct. 14, 1882. 6" 8 x 13½

300



1301 - Regulars set up at 96 candles
6" 8 x 13½ Oct 14, 1882

301